

# The Research Funding System in Spain

**Directorate General for Research and Management of the National  
R+D+I Plan**

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GOBIERNO  
DE ESPAÑA

MINISTERIO  
DE CIENCIA  
E INNOVACIÓN

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# Present legal framework

Law for the promotion and general coordination of scientific and technical research (1986)

Planning Instrument: National Research Plan

Coordination Body: General Council for Science and Technology

State Government Coordination Body: Interministerial Committee for Science and Technology

Regulation of Research Performing Organizations linked to the State (CSIC, INTA, etc.)

Other laws related to research:

Laws for the Reform of Universities (1983, 2001, 2007)

Laws for Biomedical Research (1986, 2003, 2007)

# Spanish System of Science and Technology

## Research Funding Organizations

- **State:** Ministry of Science and Innovation and their Agencies:
  - ✓ National Evaluation and Foresight Agency
  - ✓ Centre for the Development of Industrial Technology
  - ✓ National Committee for the Evaluation of Research Activity
  - ✓ Institute for Health Carlos III

**9.438M€**

- **Self-governing Communities:** Regional Ministries with competences in Scientific and Technical Research, and their Agencies

**4.380M€**

## Research Performing Organizations

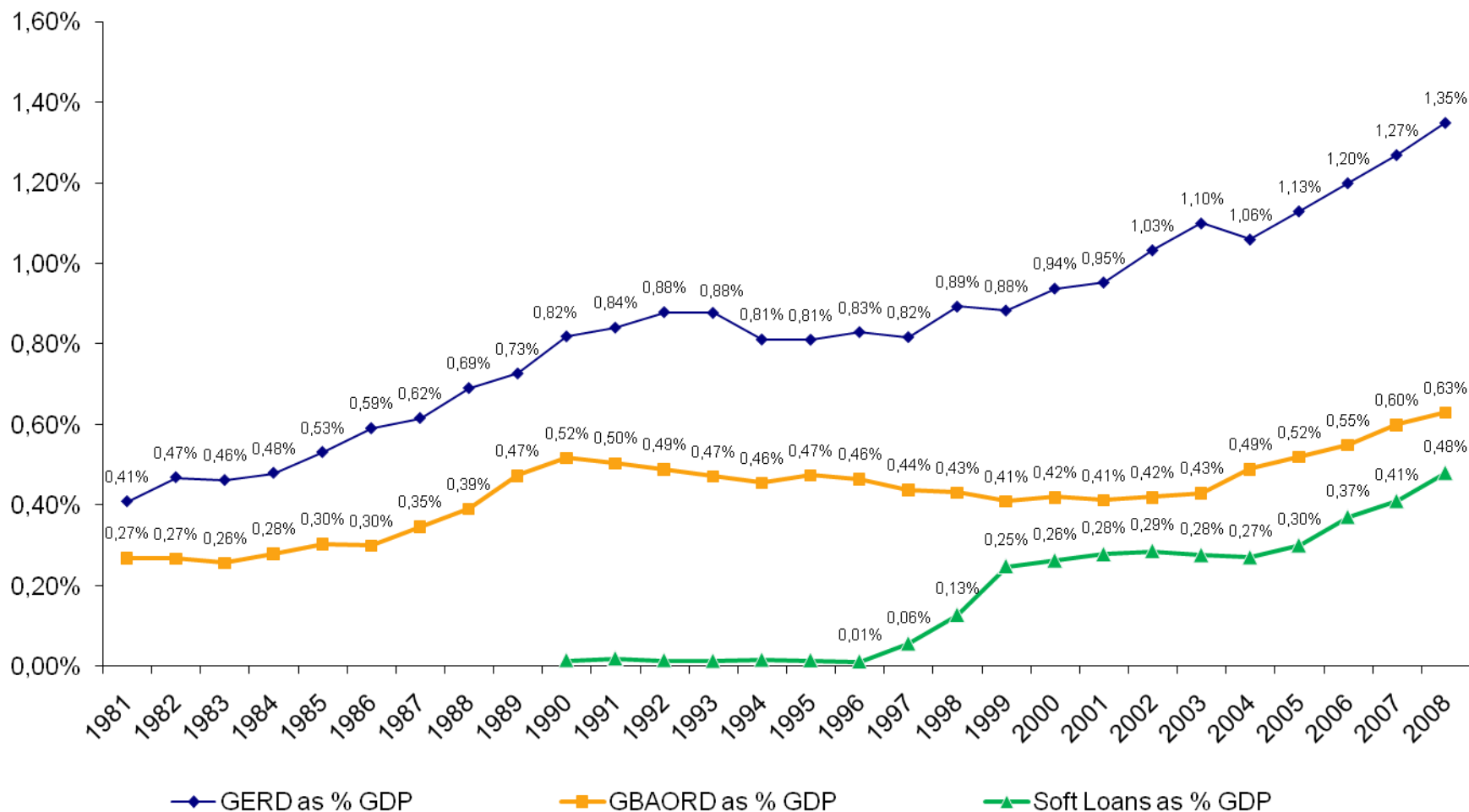
Universities, Public Research Organizations (CSIC and others), Companies, Hospitals, Technological Centers, Research Centers linked to the Administration of Self-governing Communities, etc.

# Spanish System of Science and Technology

## Public Research Organizations (Estate)

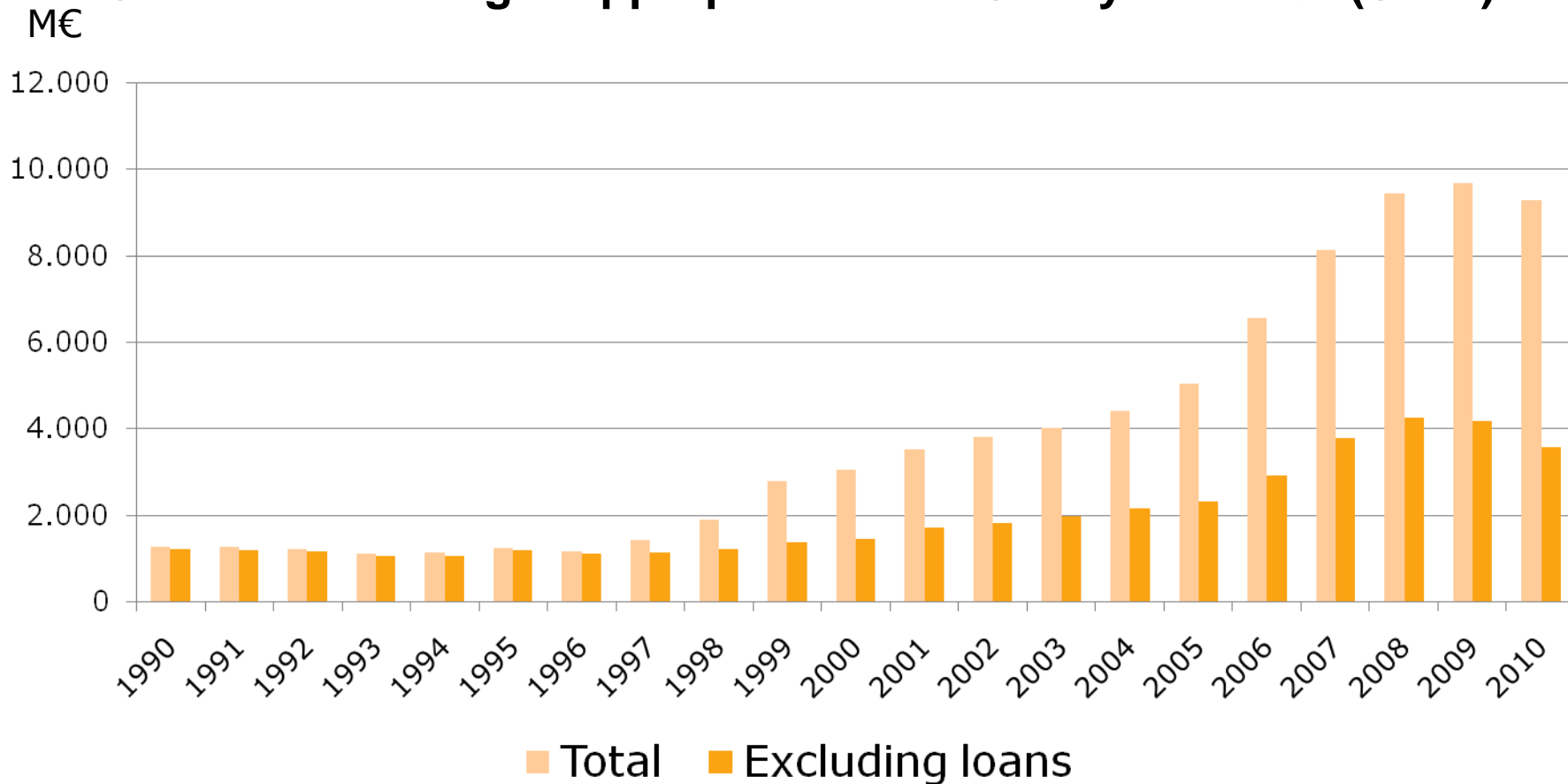
- |  |  |
|--|--|
| <ul style="list-style-type: none"><li>• CSIC -National Research Council</li><li>• CIEMAT -Energetic and Environmental</li><li>• IGME - Geological and Mining</li><li>• IEO - Oceanography</li><li>• INIA - Agro-food Researc</li><li>• ISCIII - Health Research</li><li>• IAC – Astrophysics</li></ul> | <ul style="list-style-type: none"><li>• INTA - Aero spatial</li><li>• CEHIPAR - Hydrodynamics</li><li>• CIS - Sociological</li><li>• CEPCO - Constitutional and Policy</li><li>• CEDEX - Civil Engineering</li><li>• INM - Meteorological</li><li>• IEF - Fiscal Studies</li></ul> |
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# Evolution of the System



# Evolution of the System

## Government Budget Appropriations or Outlays on R&D (State)

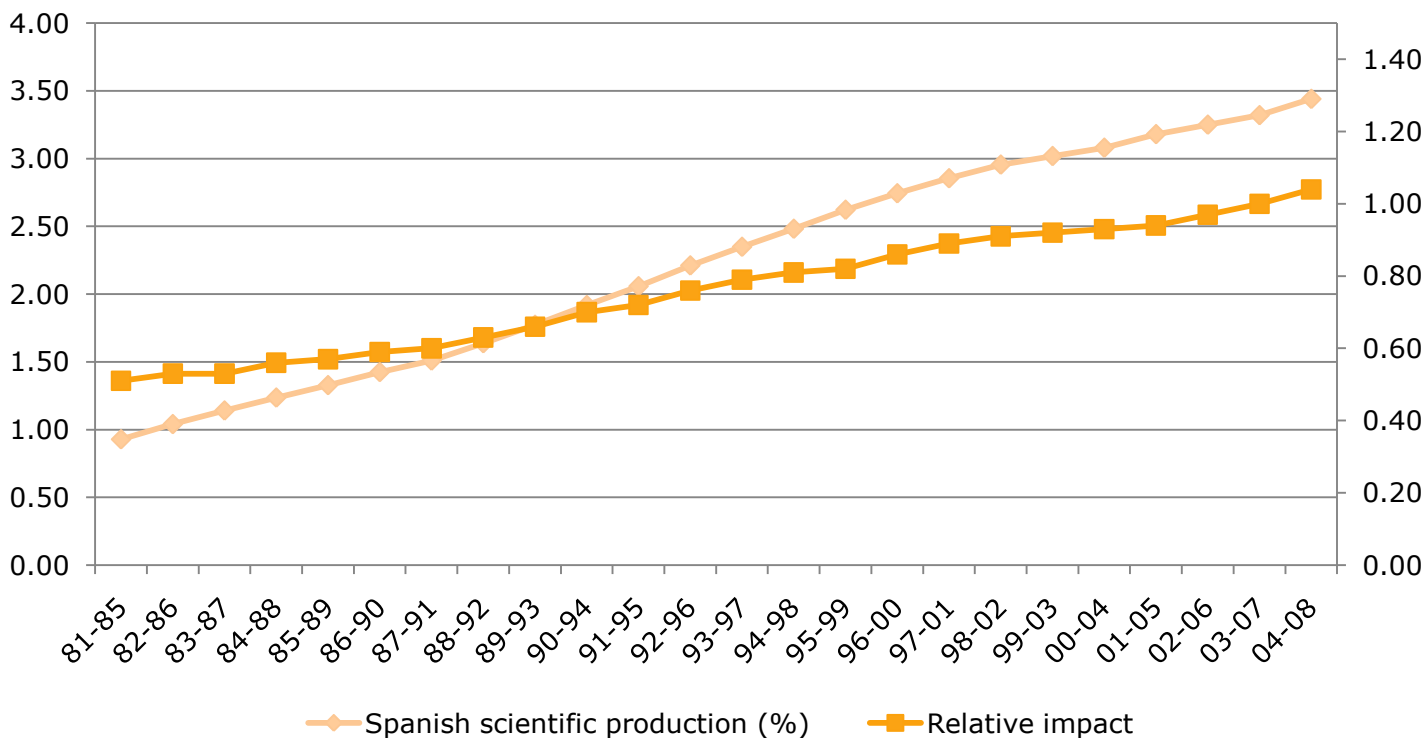


# Evolution of the System

Scientific Production		Number of publications		% World		Relative impact	
		81-85	03-07	81-85	03-07	81-85	03-07
1	United States	894.855	1.389.809	39,30	32,65	1,36	1,42
2	United Kingdom	200.877	366.880	8,82	8,62	1,20	1,30
3	Japan	148.997	361.575	6,54	8,49	0,88	0,95
4	Germany	172.828	349.959	7,59	8,22	0,95	1,25
5	China	14.149	295.513	0,62	6,94	0,30	0,63
6	France	118.902	249.047	5,22	5,85	0,94	1,13
7	Canada	105.256	201.757	4,62	4,74	1,00	1,18
8	Italy	54.237	189.982	2,38	4,46	0,86	1,11
9	Spain	21.822	141.118	0,96	3,32	0,51	1,00
10	Australia	52.937	127.487	2,33	2,99	0,98	1,09
11	India	65.322	116.862	2,87	2,75	0,30	0,54
12	Russia	119.929	116.199	5,27	2,73	0,26	0,48
13	Holand	40.547	111.458	1,78	2,62	1,24	1,43



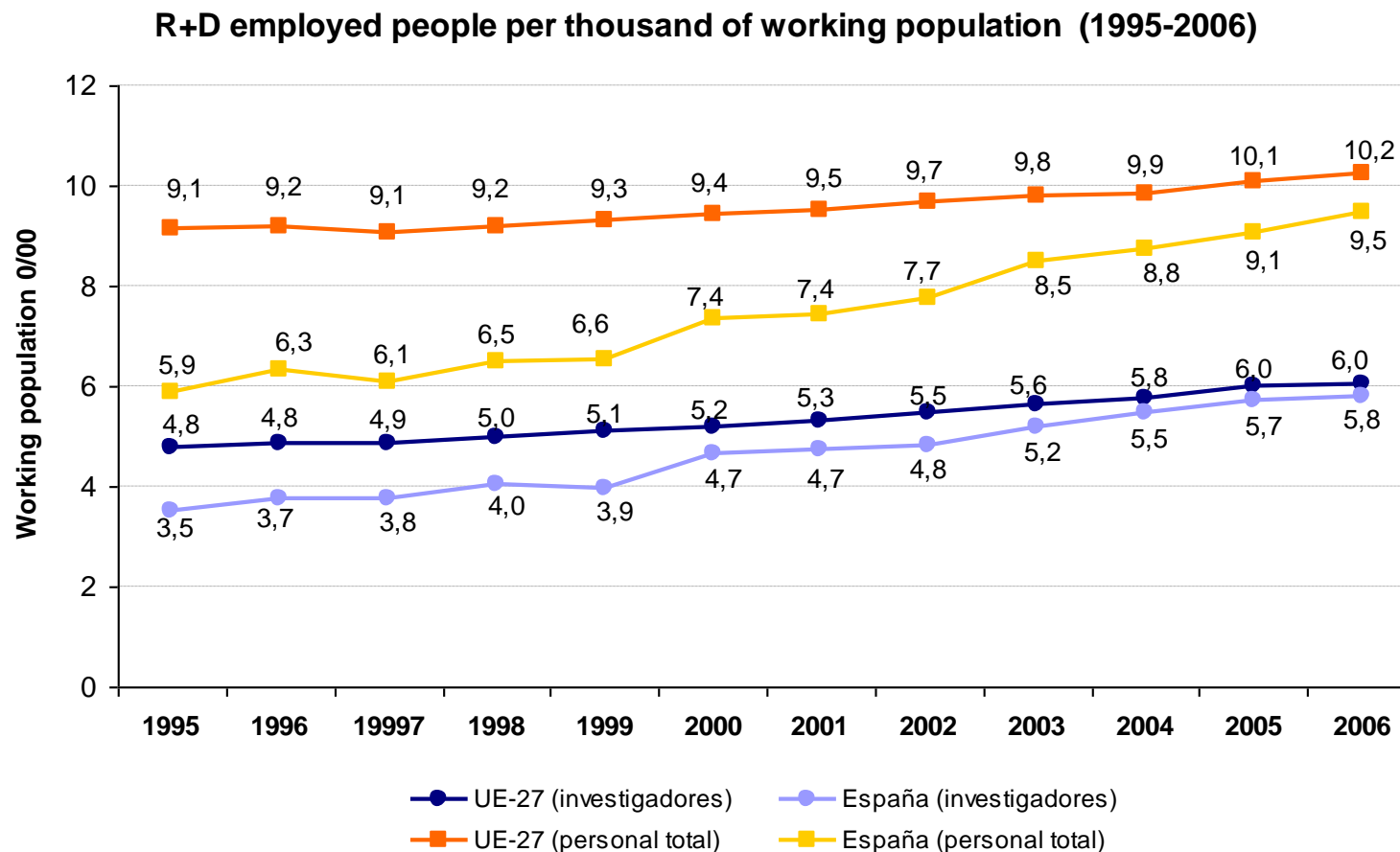
# Evolution of the System



Fuente: Thomson Reuters WOK

# Evolution of the System

## R+D employed people



# Evolution of the System

Progress is due to:

- ✓ **Systematic planning through the four-year National Research Plan. At present the 6th is being developed for the period 2008-2011**
- ✓ **Funds allocated for scientific and technical research**
- ✓ **Programs developed by the Self-governing Communities**
- ✓ **Opening of new positions at Universities and Public Research Organizations**
- ✓ **Commitment by the private sector**

# Evolution of the System

## And also due to:

- ✓ Funds allocation based on excellence: **Peer review for R+D projects** and technical evaluation for innovative projects
- ✓ High standards in the **evaluation of research activity** of individuals

## **Role played by the National Evaluation and Foresight Agency**

- ✓ Very efficient methods to carry out peer review evaluation
- ✓ Rotation of coordinators of research areas
- ✓ Recognized by the research community

## **Role played by National Committee for the Evaluation of Research Activity**

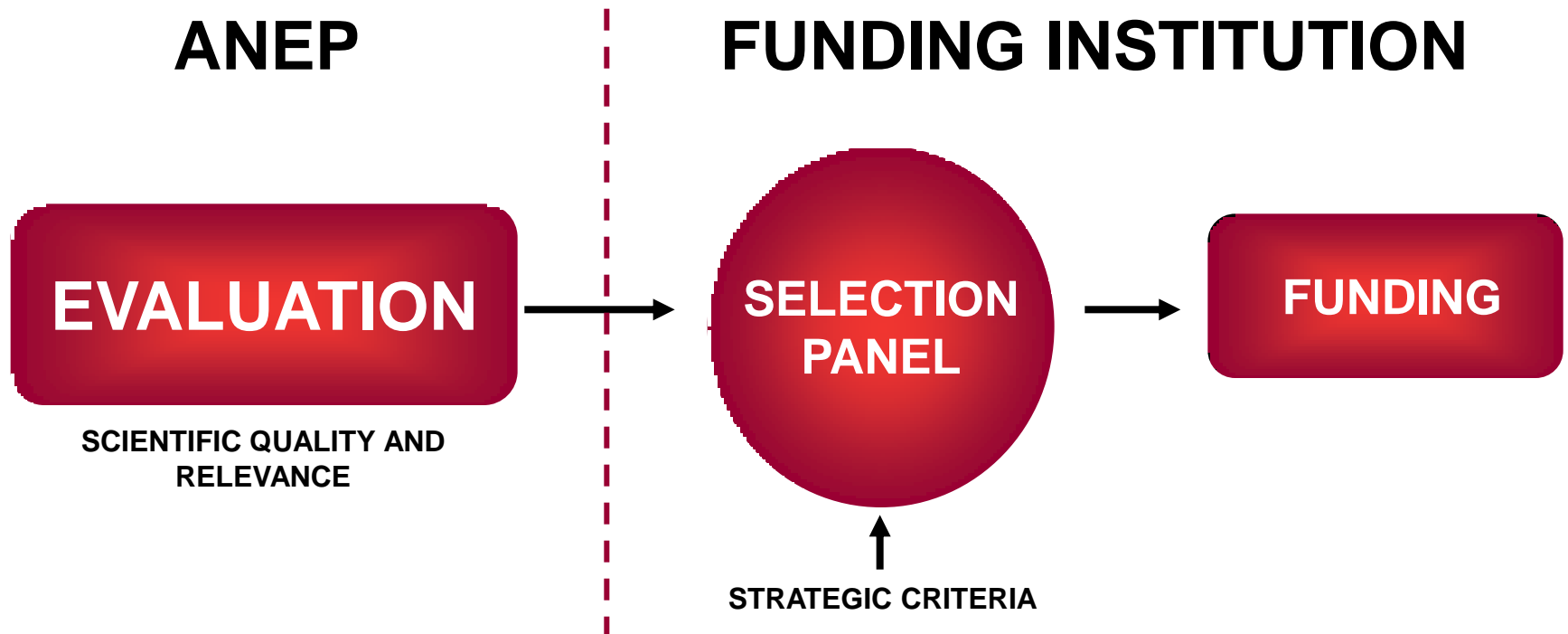
- ✓ Straight methods to evaluate research activity
- ✓ Rotation of coordinators of research areas
- ✓ Recognized by the research community

# NATIONAL EVALUATION AND FORESIGHT AGENCY (ANEP)

- ✓ **Assessment** of the scientific quality of all R&D activities that require funding, **both from public and private**. Most calls; national, regional and private.
- ✓ Spanish scientific **observatory**
- ✓ To driven up the **quality** of research, the **international competitiveness** and to promote **innovation**.
  - ✓ Projects
  - ✓ Personnel
  - ✓ Institutions

**Total evaluations in 2009: 24.120**

# Evaluation and selection of proposals



**Scientific assessment is independent of funding institution**

# Planning and follow-up

- I. National Research Plan 1988-1991
- II. National Research Plan 1992-1995
- III. National Research Plan 1996-1999
- IV. National Research Plan 2000-2003
- V. National Research Plan 2004-2007
- VI. National Research Plan 2008-2011

# Planning and follow-up

## Objectives of National Research Plan:

- To place Spain at the forefront of knowledge.
- To promote a highly competitive business community.
- To develop an all-inclusive science, technology and innovation policy; the involvement of regional spheres in the science and technology system.
- To advance in the international dimension as a basis for the qualitative leap forward by the system.
- To achieve an environment favourable to investment in R&D&I.
- To foster science and technology culture.



# Planning and follow-up

## Main Indicators of the National Research Plan:

INDICATORS	2011
Gross domestic expenditure on R&D (in % of GDP)	2,2
Expenditure on R&D by the business sector (% of the total)	60,4
Expenditure on R&D funded by the business sector (% of the total)	55
Expenditure on innovation (in % of the GDP)	3
National Budget R&D&I expenditure programme Chapters I-VII/% of total NB	1,7
Total number of researchers (per thousand working population)	7,1
Researchers in the business sector (% of the total)	42,8
Annual PhD graduates (in number)	10,470
Quota of scientific production in respect of world total (%)	3,6
Economic return Spanish participation in EU R&D FP (%)	8,0
Patent applications at the EPO (per million inhabitants)	96
Innovative enterprises in respect of total enterprises (%)	37,8

# Planning and follow-up: evaluation and monitoring

## **Integral Monitoring and Evaluation System (SISE): Monitoring instrument for public policies on R&D (I)**

- The Integral Monitoring and Evaluation System (SISE) is a tool designed for **controlling the management of public funding RD&I** programs, making them more transparent and publicising the activities, to give the Spanish society a better understanding of the activities being financed with public funds.
- The SISE evaluation is performed yearly to **follow up and evaluate research and innovation policies**, incorporating the ex-post evaluation of the results of the R&D programs into the ongoing evaluation processes in order to review current activities and identify the need for new initiatives for next National Plans.

# Planning and follow-up

## Integral Monitoring and Evaluation System (SISE): Monitoring instrument for public policies on R&D (II)

### MAIN GOALS:

- To establish a logical framework capable of **linking**, on a rational, global and hierarchical basis, **the goals** set out in the National Plan **with the instruments** identified for achieving them.
- To put in place a monitoring and evaluation system that covers **administrative** aspects as well as **technical and strategic aspects**.
- To **identify** a series of **indicators** for each instrument that enables a simple analysis to measure the degree of **achievement of the goals** established and assessment of the **outcomes and their impact** on the Spanish science and technology system.

# Accountability (administrative)

Action		Body
Verification		Awarding authority
Auditing	Internal	Financial Control Department
	External	Spanish Court of Auditors

# Accountability

## Verification by the awarding authority

### Tasks:

**Administrative:** Verification of the expenses in accordance with the national and Community rules.

**Financial:** Adequate economical justifications. No double funding.

**Tecnical:** The goals of the project have been achieved.

**Physical:** Confirm that the equipment bought actually exist.

# Accountability

## Auditing

- Internal: Financial Control Department, Ministry of Finance (IGAE)
- External: Spanish Court of Auditors

# Accountability

## Internal auditing (IGAE)

- Features:
  - ✓ Performs the control of public expenditure
  - ✓ Autonomous
- Controls financial aids charged to the State Budget and to Community funds verifying:
  - Adequate procedure to allocate the funds,
  - Awardee complies with:
    - Appropriate management of obligations
    - Adequacy of expenses
    - Correctness of justifications
    - Existence of the activity reported

# Accountability

## External auditing: Spanish Court of Auditors

Supreme audit body controlling the accounts and economic performance of the State. It depends directly on the Parliament and its members enjoy the same independence as ordinary judges.

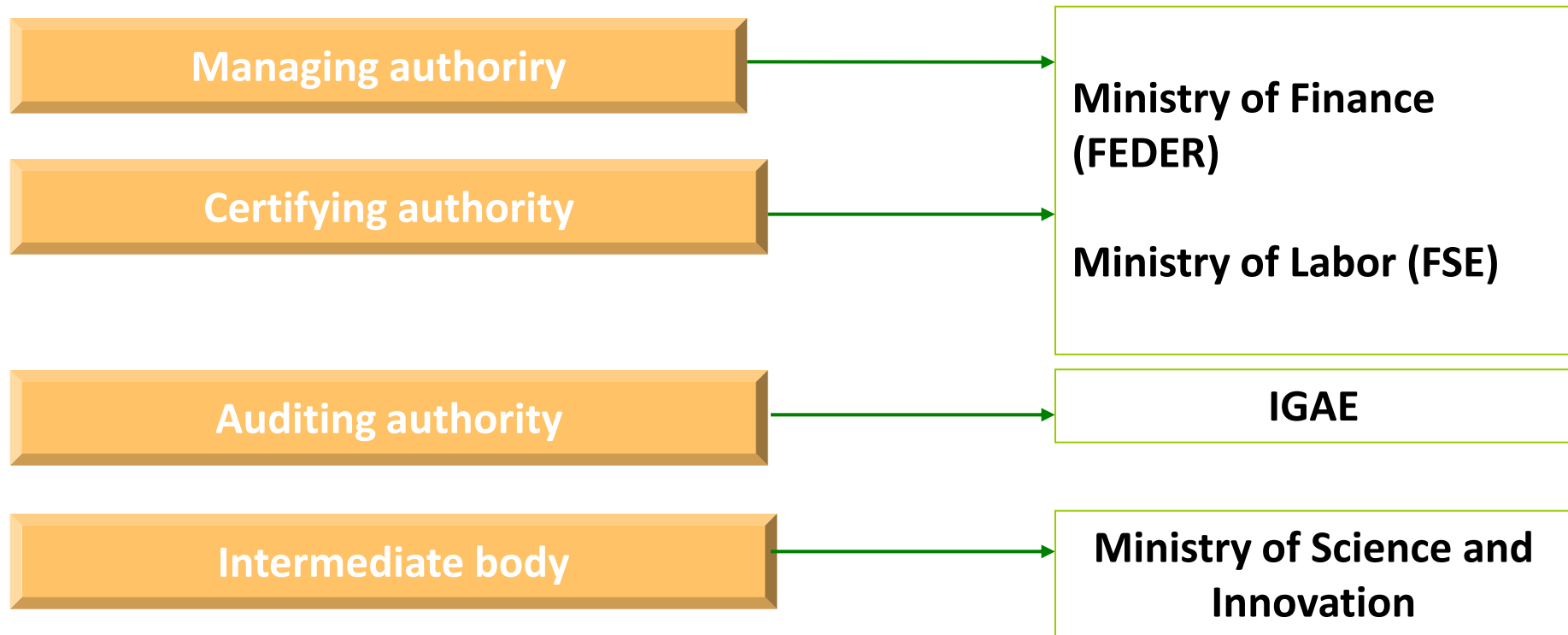
Audit function: audit of the economic and financial activity of the public sector. The aim of audit is the compliance of all economic and financial transactions of the public sector with the principles of legality, efficiency and economy.

Judicial function: judgment of accounting responsibility issues of those in charge of managing public resources, in case of misuse.



# Accountability

## Actions co-financed with European Structural Funds



# Weaknesses of the Research System

- Low vocational and research interest of scholars
- Uncertain researcher career
- Low incentives for excellent and innovative researchers and universities
- Most of scientists are civil servants
- Quantity versus quality of scientific production
- Measures to boost knowledge transference to industry
- Legal constraints: administrative burden
- Legal rules for salaries and management of research centers
- Need of a new law of science
- Need of a State Research Agency

# Future legal framework

## New Law for Science and Technology

- Being debated in the Parliament
- Approval by Parliament expected in December 2010
- Further developments dictated by the new Law achieved along 2011
- We expect to have an important reform of the System accomplished by June 2012

# Future legal framework

## Goals of the New Law for Science and Technology (I):

- Creation of a new body, the Council for Scientific and Technological Policy, to carry out the general coordination of the science and technology policies carried out by the State and by the Self-governing Communities
- Creation of a new instrument to plan in the long range, the National Strategy for Science and Technology, approved by the Council for Scientific and Technological Policy
- Creation of the National Ethics Committee
- Development of the research career along the lines of the European Charter for Researchers
- Developments of tools to facilitate cooperation at all levels

# Future legal framework

## Goals of the New Law for Science and Technology (II):

- Developments of tools to facilitate knowledge transfer
- Open access for publications linked to publicly funded research
- Science and technology outreach
- Creation of the State Research Agency
- Medium range planning instrument: the National Research Plan, linked to the National Strategy for Science and Technology
- Reorganization Public Research Organizations



Thank you!

